

What is claimed is:

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Sub B2

1. A thermoplastic resin injection molding machine comprising a plasticating unit for plasticating a thermoplastic resin, an injecting unit connected to the plasticating unit through a connecting passage to inject the plasticated resin into a mold, and a buffering unit provided in said connecting passage to reserve the resin plasticated in the plasticating unit in an amount at least equal to the injection quantity of the resin per shot, and feed the resin into the injecting unit.

2. A thermoplastic resin injection molding machine as claimed in claim 1, in which said buffering unit comprises a pot, a plunger disposed in the pot applicable to be moved forward and backward in the pot, a buffering chamber provided between the pot and the plunger for reserving the plasticated resin, and means for energizing the plunger in the resin extrusion direction.

Sub B1

~~3. An injection molding machine comprising a plasticating unit for plasticating a thermoplastic resin, and an injecting unit connected to the plasticating unit through a connecting passage to inject the plasticated resin into a mold,~~

*Sub B1*  
~~said plasticating unit comprising a cylinder, a screw rotatable and movable in the axial direction in the cylinder, means for rotation-driving the screw, a buffering chamber defined by the top portion of the screw and the cylinder to reserve the plasticated resin in an amount at least equal to the injection quantity of the resin per shot, and means of energizing the screw forward in the axial direction to feed the resin in the buffering chamber into the injecting unit.~~

*4*  
4. A thermoplastic resin injecting molding machine as <sup>*claim 2*</sup> claimed in ~~either of claims 2 and 3~~, in which the energizing means comprises a spring.

*5*  
5. A thermoplastic resin injection molding machine as <sup>*claim 2*</sup> claimed in ~~either of claims 2 and 3~~, in which the energizing means comprises a fluid-pressure cylinder.

*6*  
6. A thermoplastic resin injection molding machine as <sup>*claim 2*</sup> claimed in ~~either of claims 2 and 3~~, in which the energizing means comprises an electric actuator.

*7*  
7. A thermoplastic resin injection molding machine as claimed in claim 5, in which a constant fluid pressure from a fluid pressure source is transmitted to the fluid-pressure cylinder.

8. A thermoplastic resin injection molding machine as  
claimed in <sup>claim 5</sup> ~~either of claims 5 and 6~~, further comprising a  
pressure sensor for detecting a resin pressure in said  
buffering chamber, and resin-pressure controlling means for  
controlling said energizing means correspondingly to the  
value detected by the pressure sensor, so that the resin  
pressure in the buffering chamber is kept substantially  
constant.

9. A thermoplastic resin injection molding machine as  
claimed in <sup>claim 2</sup> ~~any one of claims 2 and 4 through 8~~, further  
comprising a position detecting sensor for detecting a  
displacement of said plunger, and plastication-controlling  
means for controlling the plasticating unit correspondingly  
to the displacement.

10. A thermoplastic resin injection molding machine as  
claimed in <sup>claim 3</sup> ~~any one of claims 3 through 8~~, further comprising  
a position detecting sensor for detecting a displacement of  
the screw, and plastication-controlling means for  
controlling the plasticating unit correspondingly to the  
displacement.

*Sub* 11. ~~A thermoplastic resin injection molding machine as~~

~~claim 1~~  
~~claimed in any one of claims 1 through 10, in which the~~  
~~plasticating unit carries out the plastication of the resin~~  
~~continuously during all the period of the molding cycle.~~

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